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THE CONTROL OF CONTAGIOUS ABORTION*

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I have not prepared a detailed paper to read at this meeting, because I wish to avoid all appearance of giving a lecture. I prefer to look upon myself as the initiator of a discussion.

The subject selected, "The Control of Contagious Abortion," is a well-worn one, but that it is not worn out is shown by the fact that one aspect of the problem was in the programme of the N.V.M.A. at Folkestone last year, and is in it again this year.

It was abundantly clear last year that the time available was far too short for a full and proper discussion, and there were many in the hall whose views could have been heard with great advantage had they not been gagged by the clock. I hope that the practitioners will take a much greater part in the discussion when the subject comes up again at Llandudno, and I note with great satisfaction that your Secretary is to play a leading part in this.

I will put my views before you as succinctly as I can, so as to leave as much time as possible to-day for other speakers.

There are two principal lines upon which the attack on the problem of the control of contagious abortion can be delivered, but the aims of these attacks are by no means identical. By far the most important line is that which aims at the eradication of the disease. The other aims at reducing the losses only, and actually means the continuance and propagation of the infection in the herd.

It cannot be insisted upon too strongly that the second line should only be resorted to as a last extremity. I will deal with this first.

The losses resulting from the presence of contagious abortion in a herd may be reduced by the use of vaccines, and the available evidence all goes to show that dead vaccines, although they can produce a transitory antibody response, are of no practical value. There is evidence to show that living vaccines have some value, but it has never been shown that they are capable of eliminating losses completely. The only claim that has been made is that by their use losses may be reduced. You will, of course, appreciate the necessity of using the living vaccine as soon as possible after it has been prepared, because there can be no doubt that the organism present tends to die out.

The great objection to the use of living vaccine is that the partial control of the disease which it gives, is given at the cost of maintaining and propagating the actual infection. At Folkestone last year the possibility of living vaccine providing a danger to human health was partly discussed. My own view is that the risk is a remote one. When it is remembered that the disease has a world-wide distribution and is of exceedingly common occurrence, and that at least 30 per cent. of cows reacting to the agglutination test pass the bacillus in the milk at some stage of lactation, it seems to be clear that there can be no living person in this country that has not at some time or other ingested the bacillus in large numbers, and it is probable that those drinking raw milk ingest it daily. This is not the occasion to theorise as to whether the human being early acquires an immunity, or whether occasional individuals are especially susceptible to infection. Numbers of statistics have been published regarding the agglutination titres of the blood of human beings, but I do not know of any figures which are confined to the sera of very young children fed on raw milk. These might furnish valuable information.

This, however, is rather by the way and is not our real concern at the moment. There can be no doubt that whatever merits the living vaccine may possess, every possible attempt should be made to attack the problem along the other line, which aims at eradication.

Generally speaking, vaccination should be very rigidly limited to herds already infected, and which are simply milk-producing machines. Such herds are constantly changing their personnel, if I may use the word, and have to be run on a very strict cash basis. The control of the disease by eradication is naturally a more complex problem, and its complexity is in part due to the fact that three human factors come into it. These are the owner—or perhaps more usually his man—the veterinary surgeon and the laboratory worker who carries out the tests. A breakdown or a failure of any one of these is fatal to success. It has been said that for the effective control of contagious abortion there is no real necessity for a very strict degree of isolation of reactors. That may possibly be true in herds under constant and very expert supervision. Are the majority of herds seen by the

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veterinary practitioner under such supervision? No doubt those supervising them are experts as dairy farmers, but do they realise what isolation, disinfection, and so on, really mean? I think it is probable that they do not. I therefore believe that if failure is not to be courted the advice to be tendered by the veterinary surgeon should be such that he can himself check whether it has been carried out. In my view, it is very unlikely that he could check whether advice as to partial segregation or isolation had been rigidly adhered to, and if it has not, then extension of the disease is likely to take place, and the blame would fall upon him. The point I want to make is that the reactors should be removed from all contact with the healthy. That this has been done, the practitioner can to a very large extent assure himself.

It was shown a good many years ago that the interval elapsing between the actual moment when the infective material gains access to the body and the development of agglutinins in the blood is about three weeks. This, I think, furnishes one of the keys to the problem. It is an indication that the interval elapsing between consecutive tests should be as short as is practicable. It is my view that eradication will be achieved the more speedily, the nearer the interval between tests approaches to one month. It is my custom, in assisting in the eradication of the disease, to recommend that consecutive tests of non-reactors should be carried out at intervals not exceeding two months, and that all reactors are removed from all contact with non-reactors.

Tests are carried out in this way until two consecutive tests with entirely negative results have been obtained. When this has been achieved, the interval may be lengthened to four months. Should reactions again appear, a return to the two months' interval must be made. I do not think it wise to cease testing completely, even when consecutive tests at four months' intervals all prove negative. There is always a possibility that in some unsuspected way infection may be introduced, and it is, I think, a small insurance premium to pay for an occasional test, say at intervals of six months, to see that everything is going well in the herd. It is, of course, easiest to carry out this plan in self-supporting herds, but even in these it may be desired to introduce a new animal occasionally. It is not sufficient to test those animals once only before they are introduced into the herd. It must always be remembered that they may have picked up the infection a few days or even a few hours before they are tested, and in that case they will not react. New animals must give two negative tests with an interval of a month between them and they must have been strictly isolated during that period.

Not the smallest part of the problem is how to deal with reactors. In certain cases, which are unfortunately in the minority, it is possible to establish a clean and an infected herd. You all know that it is in a minority of cases only that abortion occurs more than once, and that the progeny of infected animals do not become infected permanently. Calves born of reactors will give positive reactions for a time after birth, but they become completely negative before they approach sexual maturity. If, therefore, it is possible to establish a clean and an infected herd, the calves born in the latter can be used with safety, under the safeguard of tests, to replenish the former. The fact that abortion does not, as a rule, occur more than once, indicates that it may be quite possible to dispose of reactors without doing any great harm, or even any harm at all, because a place may be found for them in the purely commercial herd.

I should like, if I may, to make a few suggestions regarding the samples of blood sent for testing.

It is quite unnecessary to send large quantities of blood. If two or three cubic centimetres are sent, it is ample for the test. My experience shows me that it is necessary to say that sufficient must be sent. Occasionally I receive a tube or bottle with little more than a smear of blood in it. That, of course, is quite useless. It is important that the bottles used should be dry, particularly if the amount of blood sent approaches the minimum. The presence of water causes rupture of the blood corpuscles and liberation of the hæmoglobin. A serum tinted with hæmoglobin causes a brownish precipitate to form when it is mixed with antigen, and this may lead to an inaccurate result.

The bottles in which samples are collected should be kept perfectly still until coagulation has taken place. This ensures that all the corpuscles will be entangled in the clot, and a yield of perfectly clear serum will be obtained. Any shaking of the bottle may actually lead to rupture of the corpuscles, resulting in the liberation of hæmoglobin.

It facilitates testing if one can see to what level the blood reaches in the bottle. I mention this because I occasionally have samples sent in small bottles which are completely surrounded by a label, and one cannot tell how much blood there is in it.

It is quite unnecessary to cut off corks flush with the neck, and cover them with sealing wax. The corks are usually of such small diameter that a corkscrew cannot be used, and there is great difficulty in extracting the stump of cork.

Should you find that, if you are using a rubber cork, the cork is pushed out of the tube owing to the small amount of air space inside, and to the slippery state of the glass, the rubber stopper can be made to stay in quite firmly if a

pin be inserted alongside it. This allows of the formation of a very narrow channel for the escape of the air, and when the stopper is right in the pin is withdrawn, leaving the air in the tube under no extra pressure. It is then quite unnecessary to tie the corks in. I think one of the best ways of marking blood samples is to give them serial numbers only, and to include a list of names with these numbers in the covering letter. A duplicate list may be kept so that the report contains the numbers only. If samples are labelled with names in full, it is always necessary to number them at the laboratory for convenience in marking the racks in which the tests are put up. This has an additional advantage in that it is simpler to write a name, and some of the names are quite long, on a flat piece of paper than on a label stuck on. You would scarcely credit some of the puzzles set me in the way of deciphering names.

Discussion

Mr. A. R. Smythe said that Dr. Sheather's address dealt with cases due to Bang's bacillus, and he would be interested to know what proportion of cases of abortion were due to Bang's bacillus, and what importance attached to other causes, such as accidents and errors in feeding. With regard to undulant fever in man, he was of the same opinion as Dr. Sheather. It was obvious that virtually all samples of milk were more or less extensively affected with Bang's bacillus. As a Cornish practitioner, he regarded segregation as being impossible to carry out in most cases. The question of Government bulls suggested the question: "Is the bull an important factor in the spread of infection?"

Mr. Colin Ross asked if the antigen used in testing was standardised—otherwise it would account for different interpretations. He also asked how long the bacillus could live outside the animal body.

Mr. Scott (of the South Devon Bull Recording Scheme) said he was interested in the breeding of bulls. He asked if cows vaccinated with both living and dead vaccines would react to the blood test, and what was the best age to test heifers before their introduction to the herd.

Major Ascott said he had had good results following the use of living vaccine as far as the reduction of losses was concerned.

Mr. Motton expressed agreement with Mr. Smythe that in Cornwall isolation was usually impossible. The farms were small, buildings were inadequate, the same drinking pools were often used by several herds, and foxes and dogs dragged aborted calves across country. Refinements in methods of diagnosis which enabled one to discover animals before they were clinically affected, led to the scattering of diseased animals, and he wondered how much tuberculin testing had reduced the incidence of tuberculosis in cattle, if at all, in this country. Agglutination testing might easily lead to the spread of abortion disease. Legislation would be necessary if much good were to result.

Mr. Smythe said he thought the agglutination test would be of little avail in Cornwall. Many farmers found they could reduce their losses by breeding their own cattle, not buying in, and letting the disease run its course.

Mr. Hall asked what percentage of reactors were dangerous.

Mr. Roberts (Collompton) said he had received conflicting reports from different laboratories in connection with B.W.D. tests, and he wondered if this was due to want of standardisation in respect of the testing.

Mr. C. V. Watkins stated that he was carrying out some experiments with dead vaccine. The animals were tested every 14 days, and were re-vaccinated every two months. On the Continent some workers used first a dead and then a living vaccine.

With regard to the tests, he asked if there was anything to be gained by using a mixture of strains. He used three strains for abortion and five strains for B.W.D.

He would like to know to what extent the disease might be spread by calves after feeding on milk with abortion bacilli in it. Might the calves act as passive carriers for a time?

Mr. E. C. Bovett said he was interested to know that the dead vaccine did give a reaction to the blood test. If recently infected animals were isolated, would dead vaccine help to reduce the severity of the invasion?

Mr. W. B. Nelder remarked that the disease could be eliminated if the herd were self-supporting and the owner kept his own bull.

The Reply

Dr. Sheather's replies to his questioners were as follows:—

To Mr. Smythe.—While the immense majority of outbreaks of abortion are due to Bang's bacillus, there is evidence that other organisms are occasionally responsible. *Vibrio fœtus* is one of these.

To Mr. Ross.—Naturally the elimination of diseases presents difficulties, and it is best to attack the problem by stages, selecting that causing the most serious losses first. In many papers no indication is given regarding the density of the antigen used for the agglutination test, and it is therefore impossible to compare the titres of sera.

Bang's bacillus is not likely to survive for long in the open, particularly if exposed to sunlight and in a dry place. The actual site of abortion in a field would be dangerous for a longer time than other parts of the land. Bulls can actually become infected with Bang's disease and reported cases show that there is disease of the testicle. They may also act as mechanical carriers of infection from infected to healthy cows.

To Mr. Scott.—A positive agglutination test will be given by animals inoculated with dead or living vaccine, but in the case of dead vaccine the reaction is obtainable for a short period only, about two or three months. All animals must be tested twice with a period of isolation of about three weeks before being admitted to a clean herd.

A cow may be infected for life and never abort.

To Mr. Hall.—All reactors must be regarded as potentially dangerous, although one cannot prove that they are actually dangerous.

To Mr. Roberts.—Conflicting reports on the agglutination test for B.W.D. are not necessarily due to want of standardisation. Doyle found that birds vary in their capacity to react. One and the same bird gives varying reactions in a few weeks. There is a possibility of there being variations in the strains of B.W.D. organisms. The bacillus of B.W.D. is one of a group of which

(*Continued at foot of next column.*)

VACCINATION AGAINST CONTAGIOUS BOVINE ABORTION

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In view of the very contradictory and at times remarkable statements that have been made regarding the use of a living vaccine to immunise cattle against contagious abortion, it is of interest to read an article by Sir John M'Fadyean on the subject in the *Journal of Comparative Pathology and Therapeutics*, Vol. xlvi, Part 1, March, 1933, in which he draws the following conclusions:—

(1) The so-called vaccination against bovine contagious abortion is an intentional infection of cows and heifers with enormous doses of living, fully virulent, cultures of the organism that is the cause of the disease.

(2) Notwithstanding the fact that it has been practised in hundreds of herds in this country during the past 20 years, there has not yet been published satisfactory evidence that it is capable of preventing the spread of the disease or reducing the number of cases of abortion in infected herds.

(3) The opinions of the practitioners who have used the vaccine are deprived of value by the fact that they did not know the extent to which the herds were infected either before or after the vaccination.

(4) Inoculation of pregnant cows and heifers with living abortion bacilli is indefensible. In consequence of such inoculation the udder may become infected, with consequent risk to persons consuming the milk.

It should be possible for practitioners to collect and furnish evidence either in support of, or against, conclusions 2 and 3.

The evidence both for and against conclusion No. 4 is very contradictory. The ultimate decision would appear to rest with the medical, rather than with the veterinary, profession.

It is of interest to note that one of our best-known workers on the subject of bovine sterility, namely, Quinlan, holds the opinion that the risk is a very real one, and that in the case of pedigree herds and milch cattle he prefers methods of isolation and segregation.

It has been freely stated by practitioners of repute that the use of the living vaccine on cattle previously sterile has been followed by fertility. No evidence has been produced to show to what the sterility was to be ascribed before the use of the vaccine. Similar claims have been made in respect of the use of the dead vaccine, and indeed it has been the practice of not a few, when treating sterile cattle, to complete their operations by injecting such a vaccine.

On the other side, we have practitioners of just as high a standing as the others, who state that they regard the use of a living vaccine as a first-rate method of producing sterility. Here again, exact figures are lacking, although it is easier to understand their view if we are to regard the *Brucella* as pathogenic.

With the object of ascertaining the merits or otherwise of the use of vaccines of living abortion bacilli, over an extended period, the following questions were sent out to owners of herds in which it has been the practice to use them—owing to heavy primary infection, the impossibility of segregation, and the fact that new stock have to be constantly introduced:—

(1) The degree of infection existing before inoculation was started.

(2) The number of abortions that have occurred since inoculation was commenced.

(3) The effect of the inoculation on cattle as regards fertility.

The following answers have been received:—

Owner Number 1. (Reference H.)

Before inoculation about 80 per cent. of the original shorthorn herd at Farm E aborted, and about 50 per cent. of the Guernsey herd at Farm W. The existence of contagious abortion was confirmed by extensive blood testing. Since then, 445 cattle have been inoculated with living vaccine, and of this number 306 have been served once, 139 two or three times; 14 have aborted (the owner thinks that five of these cases may have been caused through drenching cows when heavy in calf); 24 have been sold as barreners.

Remarks.

The herds are run on a commercial basis, with portable dairies. Segregation is not a practical proposition. A good deal of new stock is bought annually. All heifer calves are weaned, and receive inoculation three calendar months before service. Tuberculin testing is carried out at six-months intervals. There have been sporadic outbreaks of white scour amongst

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there are many variants, but Bang's bacillus shows a greater tendency to stick to one type, and the reactions in connection with it are more likely to be consistent; nevertheless, the B.W.D. test is a very useful test.

To Mr. Watkins.—Tests are being carried out at Weybridge with a view to finding a vaccine other than a living one, and killed otherwise than by heat. The use of a dead vaccine followed by a living one was unlikely to have much advantage. Calves may act as passive carriers although not actually infected.

To. Mr. Bovett.—The time between the making and use of live vaccine should be short—a matter of days.

One cannot possibly combine the use of vaccination with testing and elimination because the vaccine, whether living or dead, caused a positive serum test. In the case of dead vaccine the capacity to react lasted for a short time only.

the calves, with varying degrees of mortality, at times rather high.

The owner is firmly of the opinion that the use of the living vaccine has proved of the highest possible value.

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Owner Number 2. (Reference B.1.)

Has no accurate figures to give with regard to the number of abortions that he had previous to inoculation, but had quite a large number, which varied from year to year: he would say that on an average he had 10 per cent. to 15 per cent. abort annually. Blood tests were positive in every case. Since inoculation was started, he has had practically none—just an odd one or two—which he attributes to accident. He has not bought in cattle for several years, relying on his own produce to make up his various herds to full milking strength. He has not experienced any difficulty in getting cows or heifers in-calf after inoculation. He has his herd tested for tuberculosis twice a year: his heifers are tested before their first service, and those which pass receive an injection of living abortion vaccine, and are not put to the bull for three months. He will not discontinue the use of the vaccine owing to the satisfactory results achieved. He has won various awards for clean milk production. The total number is in the neighbourhood of 180 to 200 milk cows.

Remarks.

The milking herd is divided between two farms. The cows only come in for milking (hand).

The heifers inoculated with living vaccine do not come into the milk herd, or in contact, until after their first calving.

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Owner Number 3. (Reference B.2.)

Had 18 abortions out of 60 cows in twelve months before using the live and dead vaccine. He then had the pregnant cattle inoculated with dead vaccine, and the non-pregnant ones with living vaccine. Since doing so, he has had three abort out of 67, the last of these three aborting at seven-and-a-half months. Blood testing has been carried out, and reactions obtained in the cases noted. He has always had a percentage of non-breeders, and has not noticed that vaccination has increased the number, but would say it is about 7 per cent. to 8 per cent. per annum.

Remarks.

The cattle are valued entirely on their milk production. Calves are removed at birth. None are kept in the herd. New stock is bought in the open market or at sales when required. Inoculation with living vaccine is carried out as soon as practicable after parturition. Hand milking is practised.

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Owner Number 4. (Reference A.)

Averaged 15 per cent. to 20 per cent. of abortions per annum before inoculation. Blood tests confirmed the existence of contagious abortion. Inoculation has been confined to the heifers three months before their first service. Since inoculation, has not had more than 4 per cent. abort. He considers that more difficulty has been experienced in getting cows and heifers in-calf since inoculation was started. Has several herds of mixed breeds (Shorthorn, Guernsey, Friesian, and Welsh, and crosses of these breeds), approaching 300 head of stock.

Remarks.

The cattle lie in during the winter months. Hand milking is universal. Cows due to calve are kept at one farm, and returned to respective herds afterwards. No new stock has been bought in for several years. Cattle examined for sterility show, as the principal cause, endometritis in varying degrees of intensity. Prolonged absence of œstrus—in the majority of cases with no apparent cause—has been observed, particularly in the Friesians and the Friesian-Shorthorn cows, this occurring principally after the third parturition. Glandular therapy has rectified this condition in most instances.

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Owner Number 5. (Reference G.)

Decided on having his heifers inoculated with living vaccine following positive blood tests on his milk herd: figure approximately 10 per cent. Since inoculation, he has had three out of a total of 90 abort in the course of the past twelve calendar months. He has experienced difficulty in getting cattle so inoculated, in-calf, usually after the second and third parturition. He has had six (third and fifth calvers) prove sterile after going over nine months following service. All the cattle now in his herd have been inoculated (as heifers).

Remarks.

Cattle examined for sterility show endometritis as the principal cause of sterility. Ovarian lesions in about 10 per cent. (usually in conjunction with endometritis). Cows lie in during the winter. Milking machines are in use. Herd has won awards for clean milk production. Not tuberculin tested.

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Owner Number 6. (Reference F.P.)

Confined inoculation, as an "experiment," to the heifers after their first calving. Has not had any cases of abortion since inoculation; prior to this, the disease went through the whole of his herd at Farm W. Herds at other farms are unaffected and no inoculation has been given. Is experiencing the greatest difficulty in getting the cattle which were inoculated in-calf, after their third pregnancy. He had no such experience with those which aborted before inoculation was tried.

Remarks.

The cattle lie in during the winter. Hand milking. Not tuberculin tested. Twelve cattle recently examined for sterility presented definite endometritis in eight cases, ovarian lesions only in three cases, and both conditions with pronounced salpingitis in the remaining one. All these twelve had received inoculation with living vaccine.

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Owner Number 7. (Reference Wb.)

Took over a herd of 18 cows (Shorthorn) which had been infected with abortion for about four years. Blood tests were positive in all cases tested. He bought in five cows and four of these aborted at their next pregnancy (blood tests positive). He was rearing heifer calves and had three heifers due to calve; two of these aborted a month before time and the third one at her next pregnancy at five months (blood tests positive). When these heifers slipped he decided to have all heifers and bought-in cows inoculated, and this has been carried out for the last three-and-a-half years. He has bought in seven cows since inoculation started, has put twelve heifers of his own rearing to the bull, and has had one heifer and one cow abort. The heifer he could not get in calf again, and one of the seven bought-in cows is barren. The dates of calving vary and a number go ten or twelve days over time.

The placental membranes generally show signs of unhealthiness, but there is little trouble in removing them. He is thinking seriously of not injecting the heifers this year, hoping that he has bred immunity in them to a great extent.

Remarks.

This man's data and his observation on the appearance of the placentæ in cows and heifers —not aborted—that have been inoculated are comprehensive and instructive, and are a lesson to those responsible for the somewhat vague replies received in some of the other cases. The cattle are on meadows, and lie in at night during the winter. Irregular œstrus has been observed in some of the cattle inoculated, cysts being found in the ovaries. This has proved amenable to treatment (rupture of cysts, and two injections of contramine). The heifer and cow to which he refers were not examined for sterility.

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Owner Number 8. (Reference F.)

His experiences are of interest, as he was one of the first to try the living vaccine on his pedigree Guernsey herd.

Seventy-five per cent. of his in-calf cattle (cows and heifers) aborted before the use of the living vaccine. Blood tests confirmed the abortions as being infectious. He then had every animal, of an age old enough to be served, inoculated with living vaccine. The result was that one animal only aborted after being inoculated, but he got her off his premises before aborting. She had also aborted previous to the inoculation.

One heifer so inoculated he was never able to get in calf, but he is not prepared to condemn the vaccine for that, as she may have been a barrener from some other cause.

To the fact of getting the single aborter, referred to above, off the premises before the event took place, he attributes his subsequent immunity from abortion for many years, especially with younger stock that were not inoculated at all, as they were too young for service at the time of the inoculation, which was not repeated or continued as in the other cases referred to with other owners.

Remarks.

His herd for many years was one of the best-known in the country, both as regards milk production and pedigree. One inoculation with the living vaccine without doubt cut the losses from abortion, and for twelve years, to my knowledge, no abortions occurred.

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Owner Number 9. (Reference J.)

When he started his dairy herd (Shorthorn) in 1922 and for some years, he had no cases of contagious abortion, but the disease was introduced by the purchase of an infected cow—then practically all his cows (70 to 80) aborted, for a period.

After inoculation with living vaccine was carried out, three or four of the cattle so inoculated again aborted. He has discontinued the inoculation. The heifers calve normally with the first calf, but almost invariably abort early in the next gestation; generally, however, they produce calves normally afterwards.

He found it very difficult to get the heifers which were inoculated with living vaccine in calf, but eventually did so in 80 per cent. of those treated.

Remarks.

These cows are heavy milkers. Those examined for sterility showed signs of endometritis in varying degrees of intensity. This man unwittingly bought in the open market a cow that had aborted, and which the vendor sent in—adopting the usual dodge of sending a calf with her which was not her own.

It is of interest to note that in a similar instance, where the disease was introduced into another herd and went through the whole, the first case occurred exactly 80 days from the time the infected cow was introduced into the herd. This case cannot be included in this report, as no inoculation was practised and exact figures are unobtainable as the owner is now dead. The herd in question numbered between 50 and 60, and I investigated the case and took

bloods for extensive testing, positive reactions occurring in each case.

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Owner Number 10. (Reference F.S.)

Cases of contagious abortion first appeared in his Shorthorn dairy herd four years ago, when eight out of ten heifers aborted, followed by four out of 60 of the dairy cows. Blood tests were positive in each case. He then had the whole of the stock inoculated with living vaccine, segregating those not inoculated until they had calved down and been inoculated from the non-pregnant inoculated ones. The inoculation was not repeated on the young stock as they came along, and he has had no further cases. No untoward effect has been observed on the fertility of the cows so inoculated.

Remarks.

The cattle lie out most of the year, and are tuberculin tested at six-months intervals—previously at three-months until a tubercle-free herd was established.

Recently the whole of the dairy herd (65) has been blood tested, and no reactions were obtained.

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Owner Number 11. (Reference H.M.D.)

The percentage of abortions in this herd of Guernsey cattle was 20 per cent. before inoculation with living vaccine. Blood tests were positive. Segregation being impossible, all non-pregnant and susceptible cattle received inoculation. The inoculation has reduced the cases to less than 2 per cent. per annum. No untoward effect has been noticed on fertility, although some of the heifers have had delayed œstrum after first calving.

Remarks.

Tuberculin-tested herd (twice a year). Herd fed exclusively for yield. Pasturage poor.

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The dose of vaccine which the cattle received per head in the herds referred to, was as follows:—

Herd No. 1.—Fifty per cent. received a dose of 50 c.c. Fifty per cent. received a dose of 5 c.c.

Herd No. 2.—Same dosage as in Herd No. 1, and same proportion.

Herd No. 3.—All received a dose of 50 c.c.

Herd No. 4.—Twenty-five per cent. received a dose of 50 c.c. Seventy-five per cent. received a dose of 5 c.c.

Herd No. 5.—All received a dose of 5 c.c.

Herd No. 6.—All received a dose of 50 c.c.

Herd No. 7.—Twenty-five per cent. received a dose of 50 c.c. Seventy-five received a dose of 5 c.c.

Herd No. 8.—All received a dose of 50 c.c.

Herd No. 9.—Ditto.

Herd No. 10.—Ditto.

Herd No. 11.—All received a dose of 5 c.c.

During the past two years, it has been the custom to rely on a vaccine dosage of 5 c.c. and just as good results have been obtained as with the larger dosage; in fact, no difference has been noticed.

Conclusions

(1) The evidence is definitely in favour of the inoculation having checked losses from abortion.

(2) The evidence as regards its effect on fertility is very slightly in favour of none being exercised, in the proportion of six to five.

Remarks

The herds selected have been those in which large numbers of cattle have received the inoculation, and in which sufficient time has elapsed to enable one to judge of its efficacy or otherwise. It is obvious that a small dose is just as effective as a large one, but no attempt would appear to have been made to arrive at some satisfactory method of standardisation, or the larger doses would hardly be still in more or less general use, when smaller ones suffice.

A distinguished authority is of the opinion that the inoculation of non-pregnant cows is rarely a direct cause of sterility, but the disease itself is no doubt responsible for some cases of temporary or permanent sterility in consequence of the retention of the afterbirth. Another authority is of the opinion that it is a direct cause of sterility owing to the uterine catarrh induced as in a naturally-occurring case. The ultimate view can only be determined on the mass evidence produced by general practitioners and these reports are published in the hope that they will be encouraged to do so thereby. A simple plan would appear to be for the various recently-appointed Divisional Representatives of the *Veterinary Record* to collect, from their members, evidence on the lines suggested in this article.

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In conclusion, I should like an opinion on the following from fellow practitioners:—

(1) In a Guernsey herd where contagious abortion is rife and has been in existence for some long time, the heifer calves are always born alive and, as a rule, survive: but the bull calves are always born dead. This has been the rule for the past two to three years. No preventive measures of any description have been employed. As the herd is of considerable size, and the experience is not confined to a short period, mere coincidence can be ruled out; but what is the explanation?

(2) A Jersey cow had one calf to normal time: the next one she aborted, and gave a positive result to the agglutination test. She came into regular œstrus, but would not hold to the bull. I was consulted by letter, and advised treatment, as a result of which she became pregnant,

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but did not carry to full term (32 weeks, three days). Her blood was again tested, and was reported as negative.

At the time of the first blood test of the cow (April, 1932) the owner also had the blood from a maiden heifer tested—also with positive results. He gave her four inoculations of dead vaccine: two at the first month of gestation, and two at the fifth month of gestation. As a result, she has carried her calf to full term, and her blood has again been tested, and is also now reported as negative.

What is the explanation? Can the dead vaccine have eradicated all trace from the blood? It hardly seems feasible. The owner is a retired member of the profession, and will no doubt see the reference to these cases. I hope, therefore, that he will report the results of the further investigation I suggested, if such be made.

Clinical Communications

DOUBLE CRYPTORCHIDY ASSOCIATED WITH SCROTAL HERNIA

H. P. STANDLEY, Jun., M.R.C.V.S.
Norwich

The rarity of a case of double cryptorchidy associated with hernia of one side prompts me to record the following instance, which is the only one I have encountered during my whole career of cryptorchid castration. I have often been asked to operate on supposed cases of this kind, which on examination turned out to be simply cases of uncomplicated scrotal hernia.

During last spring I was requested, by wire, by a veterinary surgeon to operate on a case of scrotal hernia for him. The subject was a two-year-old Shire colt with well-marked scrotal hernia on the near side, about the size of a large cocoanut.

On examination in the standing position prior to operation, no trace of either testicle could be felt. The colt was accordingly cast, chloroformed, and the usual dissection of the tunics carried out, while at this stage another examination for the missing gland was made without success. The dissection was then carried down the cord as far as possible and an incision made through the tunics in about the middle line. My hand was now passed into the canal; this was filled with small intestine, which was carefully pushed back into the abdominal cavity. A search for the testicle was commenced, and after a time it was located on the posterior surface of the bladder. The testicular cords were very short, and a good deal of difficulty was experienced in getting the gland exposed enough to get the chain of the écraseur over it. This, however, was eventually accomplished and the edges of the tunica vaginalis were drawn out of the wound, and brought together in a wooden clam as high up in the canal as possible.

The other testicle was next sought after and found on the floor of the abdomen, resting nearly on the inside of the inner ring, and removed without difficulty. On passing my hand through the inner ring on the side on which the hernia existed, I was very much struck with its great dilation, as I could easily pass my whole hand through it into the abdominal cavity. The colt made an uninterrupted recovery, without the slightest sign of any hernia being left.

Whilst on the subject of cryptorchid castration, one thing I have never heard mentioned in connection with cryptorchids is that the anatomy of the parts is by no means constant and normal. On several occasions I have found the inguinal canal missing, as on cutting through the skin of the scrotum the hand comes into almost immediate contact with the nipple-like depression of the internal abdominal ring, and in these cases there is always a very great risk of subsequent hernia of the intestine.

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THE VIRUS-SERUM METHOD OF DISTEMPER IMMUNISATION: AN IMPROVED TECHNIQUE

D. E. WILKINSON, M.R.C.V.S.
Chigwell

To the writer, who makes repeated use of the virus-serum simultaneous method of distemper immunisation, the warnings as to the danger of a breakdown of immunity issued with each batch of the material by the vendors, Messrs. Burroughs, Wellcome and Co., proved very disturbing.

The anxiety created was increased by a suspected breakdown in a dog thus treated, although as both distemper and canine influenza were rampant in the immediate vicinity and the illness was a very transient one, exact diagnosis was difficult without the confirmation of a biologic test which, under the conditions, was impracticable.

The symptoms shown, however, more nearly resembled distemper than influenza. There were the usual rigors, loss of appetite, high temperature and general malaise associated with both these ailments, but there was also a mucoid diarrhœa which, in the writer's experience, is more often seen with distemper than with influenza, the diarrhœa seen in influenza being of a biliary character, following a primary biliary congestion.

Although this was the first apparent breakdown personally encountered, the warning above mentioned had already excited the idea of increasing the efficiency of this method of immunisation by an alteration in the technique.

It was considered possible that the immediate administration of the hyper-immune serum following that of the virus might interfere with the formation of antibodies and thus prevent the acquisition of an active immunity. To the clinical mind the obvious solution was the extension of the interval between the two injections with a view to giving the virus time to infect the patient before it became inactivated by the hyper-immune serum.

Before embarking upon this scheme, Major Dunkin was consulted, and expressed himself in favour of the method, suggesting, however, that the interval between the two injections should not be very prolonged unless the patients were under immediate and constant observation, so that in the event of a heavy reaction to the virus the protective serum could promptly be given.

A start was made with twelve-hour intervals, but in two cases the reaction was more severe than was desirable and the interval was then considerably shortened—firstly to six hours, then to three hours and finally to a period not less than half-an-hour nor longer than one hour.

This last method has been found to be quite satisfactory and has now been adopted as routine. Several dogs which have received serum only half-an-hour after virus have shown unmistakable reactions by elevations of temperature, slight malaise and slight purulent conjunctivitis. Two cases thus treated, a sheepdog, two years old, and an Irish wolfhound, had marked distemper attacks, only aborted by a second dose of serum. In these cases the severity of the attacks was attributed to the greater dilution of the serum in the large breeds. A Dachshund treated in the same way at the same time showed no such reaction, although his immunity has since been established by accidental and prolonged exposure to natural infection.

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THE IMMUNITY TO DISTEMPER OF THE SUCKLING PUPPY

D. E. WILKINSON, M.R.C.V.S.
CHIGWELL

Early in April a client of mine sent away a nine-months-old bull puppy on approval to a prospective purchaser. The puppy was returned ill with distemper. He also infected his litter sister and on April 10th both dogs came under my treatment.

The mother of these puppies was suckling a litter of five very lusty pups in the same house and under the care of the same attendant. She had, however, been immunised on July 10th, 1931, and successfully resisted infection in spite of being in very low condition through breeding and suckling two litters within the year.

In consequence of the strain of nursing, the bitch developed an attack of eclampsia on April 11th. This was treated by hypodermic administration of a calcium solution and removal of her puppies and the next day she had recovered. During the night, as she was very noisy and restless, her mistress returned her puppies to her and a relapse speedily followed. The same treatment was adopted and nursing of her puppies strictly forbidden. The bitch made an uninterrupted recovery, but a few days later all the weaned puppies developed distemper! Treatment with hyper-immune serum resulted in a prompt recovery of four of these puppies, one dying of collapse following enteritis.

Carré has expressed the opinion that the immunity of suckling puppies to distemper arises from the mother's milk and this incident seems to support that view.

I have seen many attempts made to infect suckling puppies with distemper by exposure to natural infection, but none of these attempts has been successful.

A FURTHER REPORT ON THE INDUCTION OF ŒSTRUS BY THE USE OF PROLAN (BAYER)

J. F. D. TUTT, F.R.C.V.S.
WINCHESTER

In the *Veterinary Record* of April 15th, 1933, a report on the use of this preparation on eight cattle was published. This further report, on 14 cases, is more comprehensive as, in addition to cattle, an account of its use in the case of three bitches and one mare, is given.

As in the case of the previous report, its use may no doubt be inconclusive in some of the cases in view of the other treatment, but its value, *per se*, would appear conclusive in cases 1, 6, 12, 13 and 14. In cases where a corpus luteum persistens was found and expressed, for example, it would be inconclusive to ascribe the onset of œstrus to Prolan.

It is of interest to note that three members of the profession who have used this preparation, on my advice, on cattle where œstrus had not been observed, report favourably on its use, and in their cases no other treatment was adopted. On an average they have reported œstrus in seven days from the date of injection.

In none of the cases that have been reported by me, has more than one injection been given.

No.	Class of Animal.	Name.	Age.	Date Examined.	Previous History.	Clinical Findings.	Treatment.	In Œstrus.
1	Thoroughbred Mare.	" D.A."	13 years	4/4/33	Foaled, January 24th, 1933. Not been in œstrus since.	None	Ovaries massaged. Prolan 125 units.	April 17th. Served on this date, and again on April 19th, 1933.
2	Guernsey Heifer.	Dorothy 3rd.	2½ years	10/3/33	Has been treated for vaginitis. Not been seen in œstrus.	Cyst right ovary.	Cyst ruptured. Prolan 125 units. Ovaries massaged. Contramine, 2 c.c.	Mar. 24th, 1933.
3	Roan Shorthorn Heifer.	Anise	2 years	10/3/33	In œstrus 3 months ago. Not in œstrus since. Regarded as pregnant.	Not pregnant. Corpus luteum right ovary.	Corpus luteum expressed. Prolan 125 units. Ovaries massaged.	Not been observed by owner. Has been turned out with others with the bull.
4	Guernsey Cow	Lilian	Aged. Not known.	2/3/33	Calved Sept. 4th, 1932. Not been in œstrus since.	Ovaries normal. Uterus enlarged, but no discharge. Pre-œstral engorgement ?	Ovaries massaged. Prolan 125 units.	Mar. 4th, 1933.
5	Shorthorn Cow	Flower	7 years	27/1/33	Calved 4 times up to full term. Blood test positive. Inoculated with living vaccine, Feb. 4th, 1932. Calved live calf 7 days before time, Jan. 11th, 1933.	Endometritis. Uterus not involuted.	Prolan 125 units. Lugol 1%. Contramine, 2 injections.	Feb. 9th, Feb. 15th, Mar. 11th, 1933.
6	Shorthorn Cow	Polly	8 years	27/1/33	Aborted Nov., 1931. Blood test positive in Jan., 1932. Inoculated with living vaccine, Feb. 4th, 1932. Calved to full term, live calf, on Jan. 12th, 1933. Has been washed out every 4th day since calving.	Uterus not involuted. Otherwise normal.	Prolan 125 units.	Mar. 8th & 29th 1933.
7	Shorthorn Cow	May	2 years, 9 months.	27/1/33	First calf (live heifer), Nov. 24th, 1932. Inoculated with living abortion vaccine on Nov. 27th, 1932. Not been in œstrus since.	Corpus luteum right ovary.	Corpus luteum expressed. Prolan 125 units. Contramine, 2 injections.	Feb. 1st, 1933.
8	Shorthorn Cow	Lovely Eyes	4 years (approx.).	27/1/33	Aborted Oct. 23rd, 1932. Blood test taken in Jan., 1933, negative. Inoculated with living abortion vaccine, Oct. 27th, 1932. Washed out every 4th day. Not been observed in œstrus since aborting.	Cyst left ovary.	Cyst ruptured. Prolan 125 units. Contramine, 2 injections.	Feb. 8th & Feb 28th, 1933.
9	Shorthorn Cow	Irish Lass	4½ years	27/1/33	Was served several times after first calving, then went several weeks and was regarded as pregnant, but on examination found not to be. Blood test positive. Inoculated with living abortion vaccine on Feb. 4th, 1932. Served after 2 months, and aborted twins on Nov. 15th, 1932, at the 5th month. Has been washed out every 4th day, and has not been in œstrus since aborting.	Ovaries and uterus, etc., normal.	Ovaries massaged. Prolan 125 units. Contramine, 2 injections.	This cow has never been in season since. The owner thinks that she " stole " the bull some day about 20/1/33.
10	Pedigree Dairy Shorthorn Cow	N.C. 9th	2 years, 11 months	27/1/33	Calved Oct. 30th, 1932—live bull calf. Hard parturition. Was inoculated with living abortion vaccine on Dec. 10th, 1932. Has had an intermittent discharge since calving. Oestrus not observed since then.	Corpus luteum right ovary. Slight cervicitis.	Corpus luteum expressed. Cervix dressed. Prolan 125 units. Contramine, 2 injections.	Feb. 10th, 1933
11	Pedigree Dairy Shorthorn Cow	N.F. 4th	3 years 5 months.	27/1/33	Came into season several times before first holding to the bull. Four to 5 months later came into season again and 6 or 7 weeks later was inoculated with live abortion vaccine (4/2/32). Served on August 5th, 1932, and aborted Jan. 5th, 1933. Has been washed out several times.	Normal	Prolan 125 units. Contramine, 2 injections.	Feb. 22nd, 1933.

No.	Class of Animal.	Name.	Age.	Date Examined.	Previous History.	Clinical Findings.	Treatment.	In Œstrus.
12	Cocker Spaniel Bitch.	Winden San Fairey-Ann	Born May 12th, 1929.	13/3/33	Whelped last litter on Mar. 1st, 1932. Last in œstrus, July 28th, 1932.	Normal	Prolan 10 units	April 1st, 1933.
13	Cocker Spaniel Bitch.	Winden Pierrette.	Born Aug. 18th, 1930.	13/3/33	Whelped last litter on Mar. 8th, 1932. Last in œstrus on Aug. 1st, 1932.	Normal	Prolan 10 units	April 1st, 1933.
14	Cocker Spaniel Bitch.	Sulla Creole	Born Feb., 1929.	13/3/33	Whelped last litter early in Feb., 1932. Last in œstrus on June 14th, 1932.	Normal	Prolan 10 units	April 3rd, 1933.

Contramine has been given in cases where there is a history of abortion, use of living vaccine, or where there is evidence of discharge, *e.g.*, in endometritis, owing to its reputed bacteriolytic action on the *Br. abortus*.

I hope that others will give the preparation a trial and report on the results obtained, whether favourable or otherwise.

Case No. 4 in the appended list would, in my opinion, have come into œstrus without the use of Prolan: œstrus was evidently "on its way" when the cow was examined (note "Clinical Findings").

Abstracts

[**The Course of Infectious Abortion in Cattle (Bang Infection) in a Large Herd.** Wall, S. (1932). *Acta Path. et Microbiol. Scand.* Suppl. xi. 126.]

The history of abortion in a herd in which some 200 to 300 calves are produced annually, is recorded. The disease appeared in the herd in 1900 and has continued with varying severity until 1932. From 1917 abortions decreased until in 1923 not a single case occurred, but in 1924 the disease broke out again. Since then the percentage of premature births and abortions has varied from 5 per cent. to 46 per cent. It has been higher among the younger animals under four years of age than in the older animals. This, in the opinion of the author, indicated that the older animals acquired some degree of immunity. During the stage when the disease was spreading actively the fœtus was, as a rule, expelled at an earlier stage of pregnancy than during the "regressive" period of the infection, which is attributed to a "weakening of the bacteria." The author also advances evidence to show that, contrary to current opinion, abortion does not confer immunity, and comes to the conclusion that, as a rule, the immunity observed must here have resulted from an infection *which did not bring about abortion or premature birth* (*e.g.*, by an infection of the udder).

He also points out that our weapons against the disease are: first, immunity, which can be obtained by treatment with bacterin; and, second, a lower virulence of the infectious agent, which can be obtained by inoculation with a vaccine (living bacteria) of low virulence.

In the course of discussion Professor Sven Wall states that it is possible to produce the disease in a calf by feeding it with milk containing the virus. Such infection may be detected serologically but passes off without any perceptible signs. He also states that it is also well known that in herds where the calves live together with the infected cows and where these calves are fed on unboiled (unsterilised) milk, the disease in the course of years becomes less severe in the young animals than in those herds with special stalls for young animals isolated from the stalls containing the infected cows and where the calves are fed on sterilised milk. This is an observation of great importance, which may have a bearing on the low incidence of acute cases of undulant fever among the population of Great Britain.

Ll. E. W. B.

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[**Parasitological Field Trials with Sheep.** Ross, I. C., and Graham, N. P. (1932). Commonwealth of Australia. *Journal of the Council for Scientific and Industrial Research.* January 1st, 1931.]

During 1931 field trials were initiated by the Division of Animal Health to investigate different aspects of the problems involved in controlling losses from intestinal parasites of sheep. The present report deals with further trials carried out on a practical basis at two properties, "Gundowrinja" in New South Wales, and "Trodsley" in Tasmania. On the former, heavy mixed infestations were met with in lambs at weaning time, the more important parasites being *Hæmonchus contortus*, *Ostertagia circumcincta*, *Trichostrongylus* spp, *Nematodirus* spp, *Œsophagostomum renulosum*, and *Chabertia ovina*. In addition *Dictyocanthus filaria* was not uncommon. *Fasciola hepatica*, formerly common, had been largely eradicated by repeated drenching with carbon tetrachloride. The

trials, of which the conditions are fully described, indicated that increased risk of parasitism owing to heavy stocking on improved pastures was more than offset by the improved condition of the sheep run on such pastures. An appreciable gain in body-weight and wool production was noted in sheep run on improved pastures sub-divided for monthly rotation of grazing. At the end of the trial practically all worm infestation appeared to have been thrown off by sheep on the improved pastures, whether the animals had received medicinal treatment or not.

At "Trodsley," *Ostertagia* spp, *Trichostrongylus* spp and *Nematodirus* spp, with heavy infestation with *Œsophagostomum renulosum* and *Chabertia ovina* prevailed. *Hæmonchus contortus*, formerly of major importance, had been controlled by drenching with sodium arsenite, copper sulphate or carbon tetrachloride. As the result of the latter, fluke infestation had practically disappeared. Experiments were carried out to ascertain the effects of routine monthly treatment with the above agents upon Trichostrongyles, with the result that the mortality caused by these worms was greatly reduced. The treated sheep also yielded more wool and showed an appreciable gain in weight. It was concluded that a combination of improved nutrition with medicinal treatment was desirable before wool and mutton production on the property could be raised to a satisfactory level.

Ll. E. W. B.

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[The Campaign against the Contagious Diseases of Poultry. Lesbouyries. (Congress of Aviculture of Mezieres, 1932). *Récueil. de Méd. Vét.* Vol. 109, No. 2.]

In order to protect his stock, the poultry farmer should know that it is liable to attack by two groups of contagious diseases—those due to parasites and those for which microbes are responsible, and that, against these, different means of action are necessary.

The attack of parasites is grave and persistent. It occasions heavy losses directly, and indirectly may induce rickets, coryza, paralysis, etc. Disease of an infectious and contagious nature, while giving rise to great mortality, is capable of control by treatment or prophylaxis. Infection is brought on to a healthy farm by the introduction of a subject sick, convalescent or apparently healthy and yet harbouring disease germs; *e.g.*, a fowl which, as chick, had pullorum disease, survived, and yet the ovary and egg were affected and also the chick hatched from the egg.

On a healthy farm the ideal is to prevent contact with strange birds, but as new blood may be wanted and as it is necessary to compete at shows, newly-purchased birds and those on return from exhibition should be subjected to quarantine. Certificates of freedom from infection are not to be relied on. During isolation symptoms of contagious coryza and of variola have time to manifest themselves and the newly-bought may be tested for tuberculosis and bacillary white diarrhœa. Eggs of parasites should be looked for in the excremental matter—it is known that adult birds, apparently healthy, may pass eggs of parasites which will gravely affect the young.

Finally, on a healthy farm epidemics of paratyphoid have occurred through ingestion of animal food soiled by microbes of this malady and it is to be remembered that fatal cases of paratyphoid in human beings have been traced to eating poultry so affected.

On a contaminated farm the combating of contagious disease differs somewhat in the methods to be adopted. A parasitic malady persists through dejections on a damp soil; hence the necessity for drainage, collection and burning of droppings, disinfection of premises, the giving of parasiticides to old and young and to the latter cod-liver oil, vitamins, and milk and its derivatives.

In order that the young may resist parasitic attack it is necessary to increase their powers of resistance by good food. To eliminate bacillary white diarrhœa from a farm every bird, male and female, carrying the germ, should be eliminated. Typhoid, cholera and variola are combated by vaccination. As to tuberculosis, where it has obtained a footing on a farm, total slaughter is recommended; at the same time, supervision of the food is necessary and of the health of the attendants; outbreaks of tuberculosis amongst poultry have been traced to the latter source.

W. R. D.

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[The Removal of Foreign Bodies from the Œsophagus of Cattle. Bambauer, L. *Tierärztl. Rdsch.* January 29th, 1933. No. 5. p. 79.]

When foreign bodies such as pieces of turnip or potato become lodged in the œsophagus it is a more simple matter to remove the obstruction when this occurs in the cervical portion than in the thoracic portion of the gullet.

Bambauer prefers to withdraw the obstruction rather than to risk injuring the œsophagus by pushing it down. He claims to have had some success with a modified probang which he describes. The end comprises a bell-shaped spiral of strong wire, shielding a corkscrew device, which can extend for 4 cms. beyond the rim of the bell. Although the method is not new the modified design has given better results than heretofore.

N. S. B.

Review

[The Nutritive Properties of Milk in Relation to Pasteurisation. J. D. Stirling, B.Sc., Ph.D., and J. H. Blackwood, B.Sc., Ph.D. The Hannah Dairy Research Institute.]

This excellent little volume of 80 pages gives an extremely well-balanced summary after an exhaustive examination of the most important literature on the vexed and sharply-discussed subject of pasteurisation. It is a most opportune publication on a subject that has been the source of acute controversy, particularly within the last few years. In a sentence in the preface, Norman C. Wright, M.A., Ph.D., the Director of the Hannah Dairy Research Institute, sums up the object of the book by saying that "it is a review of evidence, not a summary of opinions." Herein lies its great value, as, so far as the reviewer is aware, it is the only publication where the authors have carefully scrutinised an enormous amount of literature on the subject of pasteurisation and presented an unbiased summary of the evidence obtained. Some idea of the exhaustive examination made by the authors is evinced by the fact that the List of References includes nearly 200 original papers.

In the Introduction the authors state that "The review is not concerned with the bacteriological aspects of pasteurisation, nor are the problems connected with milk-borne disease within the scope of the inquiry. The conclusions of the review can only be considered of value within the field of dietetics." In view of the amount of controversy which the subject of pasteurisation has provoked, it is well that the authors have kept this particular aspect of the problem so much and so well to the forefront, because from the practical point of view it is a matter of the greatest importance and is the one by which pasteurisation must stand or fall. In their endeavour to arrive at a definite conclusion of that issue, however, the authors have covered a much wider field than might be expected, which adds greatly to the value, interest and instructiveness of the Bulletin.

It is of special interest to note that even after such an exhaustive inquiry and critical examination of so much literature, the authors are of the opinion that the subject is one which demands further investigation.

The volume is attractively set out and should appeal to everyone interested in this subject, and the protagonists for and against pasteurisation would be well advised to obtain a copy and study it carefully.

The reviewer cannot conclude without saying how deeply he regrets the death of Dr. J. D. Stirling, one of the joint authors of the Bulletin, in February, 1933.

N.V.M.A. Divisional Reports

NORTH OF IRELAND V.M.A.*

ANNUAL MEETING AT BELFAST

The Annual General Meeting of this Association was held in the Café Royal, Belfast, on January 27th, 1933, where members were entertained to tea prior to the Meeting, on the invitation of the President, Mr. John Loughran, J.P., M.R.C.V.S., Aughnacloy.

The following members were present: The President, Messrs. T. Finch, H. C. I. Kelly, H. M'Connell, A. Munro, R. W. Williamson, R. Cassells, W. G. Jones, E. Rosborough, D. Greene, J. Kellett, H. D. Gilmore, H. L. M'Connell, M. Sim, J. I. Magowan, and A. Spreull.

After tea the following business was dealt with by the meeting. The minutes and apologies for non-attendance were read by the Secretary, and the former adopted.

A letter from Captain Jewell, tendering his resignation as a member of the Association was received with regret, and it was decided to ask this member to reconsider his resignation.

A letter from a practitioner in Co. Monaghan was read, dealing with the question of the performance of veterinary work by an Agricultural Adviser in Co. Fermanagh, and the Secretary was instructed to take the matter up with the Ministry of Agriculture. Arising out of this letter it was proposed by Mr. T. Finch, and seconded by Mr. H. C. I. Kelly "That the Association should press for legislation of a protective nature against unqualified persons, similar to that which now exists in the Irish Free State." All members favoured the suggestion, and the matter was left in the hands of the Council.

The question of the U.S.P.C.A. taking in paying patients was raised by Major Williamson. It was decided that the Secretary write to the Society for an explanation.

President's Address

In his Address from the Chair the President said:—

"I would like to review for your benefit the progress of the Association during the year in which I had the honour to be your President.

"At the Annual Meeting in January last, over 30 members attended, and I understand that it was one of the liveliest meetings in our history.

"At later dates various meetings of the Council took place, and the scheme for the free treatment of sick animals of poor people was completed, thanks to the energetic work of your Secretary.

"On June 22nd, one of the most successful meetings we have ever had, took place in Londonderry, when, despite the long distance

* Received for publication April 13th.

to be travelled, nearly 40 members attended, killing for ever the bogey that a successful meeting could not be held outside our usual centre. Mr. Begg's address was an invigorating treat we all enjoyed, and hope to repeat. I do not think I ever attended a more enthusiastic meeting.

"Next we come to that very well-deserved token of regard which our profession gave to Mr. Emery on his retirement; his work, it is most gratifying to note, had already received Royal acknowledgment. The Dinner given in his honour does credit to our profession as a social function.

"We have now come to another General Meeting. 1932 has been a bleak year, but the profession have much to be thankful for, and have very bright prospects, for one can see that the time will soon arrive when the public will demand legislation in respect of both meat and milk. I venture to hope that soon we shall have a Milk and Dairies Order as well as extended meat regulations to cover all meat consumed at home as well as for export. A Milk and Dairies Order is essential in order that the full benefits of the Bovine Tuberculosis Order may be obtained.

"In this new legislation—which should, to be effective, co-relate all our activities under one authority, *viz.*, the Ministry of Agriculture—the veterinary surgeon will, I feel, receive that status which is long overdue. My wish for you all is that you each share to the full the benefits that such legislation is bound to bring."

Election of Officers

The following were elected for 1933:—

President.—Mr. F. W. Hart, Enniskillen.

Vice-Presidents.—Mr. J. H. M'Crea, Londonderry, and Mr. J. I. Magowan, Ministry of Agriculture, Belfast.

Hon. Secretary.—On the proposition of Mr. Monro, seconded by Mr. Finch, Mr. J. B. Caruth was again elected Secretary of the Association.

Hon. Treasurer.—Mr. H. C. I. Kelly, Portadown.

Council.—Messrs. F. W. Emery, A. Munro, H. D. Gilmore, D. R. Williamson, H. M'Connell, J. Loughran, and J. Ewing Johnston.

Life Membership.—A proposal by Mr. Munro, that Mr. F. W. Emery be elected a life member of the Association, met with the unanimous and hearty approval of all members.

New Members.—Messrs. J. E. Rosborough and J. M'Allan were elected members of the Association.

A vote of condolence to Mr. Smith, on the death of his daughter, was passed.

A vote of thanks to the outgoing President having been passed, the meeting closed.

J. B. Caruth, *Hon. Secretary.*

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WESTERN COUNTIES V.M.A.*

ANNUAL MEETING AT EXETER

The 49th Annual General Meeting of the Western Counties Division of the N.V.M.A. was held at the Rougemont Hotel, Exeter, on Thursday, March 16th, at 2 p.m. The President, Mr. W. G. Blackwell, occupied the chair.

The following members signed the attendance book: Messrs. Blackwell, A. R. Smythe, W. Nelder, R. B. Nelder, R. E. L. Penhale, J. M. Penhale, C. Masson, L. W. Bovett, G. D. Lansley, A. G. Smith, J. H. Patterson, H. B. Kauntze, C. V. Watkins, P. Matthews, H. Percy, C. Norman, E. R. Edwards, E. B. D. Hall, E. C. Bovett, J. K. Irvine, W. Roach, G. Roberts, S. J. Motton, and Majors Fyrth, Ascott and Rankin. Dr. A. L. Sheather, and Messrs. Macdonald, T. Scott, Colin D. Ross and P. Baird were present as visitors.

Apologies for absence were received from Sir F. Hobday, Major Dunkin, Major Wright, Messrs. Thorburn, Wilkins, Harvey, senr., Harvey, junr., W. L. Richardson, A. G. Saunders, J. G. Crowhurst, E. R. Smythe, J. C. Stephens, H. Fraser and Major James.

The minutes of the previous meeting, having been published in the *Veterinary Record*, were taken as read.

Correspondence.—Letters from the N.V.M.A. *re* the appointment of a Divisional Representative of the *Veterinary Record*, and in connection with the Golf Competition to be held at the Annual Congress, were read, and Mr. A. R. Smythe was appointed the Divisional Representative of the *Veterinary Record*.

As a result of correspondence from the National Horse Association of Great Britain, it was decided that the Division should subscribe to that Association.

New Members.—Messrs. J. H. Patterson, M.R.C.V.S., of Torrington, and A. G. Smith, M.R.C.V.S., of Paignton, were unanimously elected members of the Division.

Reports.—The Hon. Treasurer presented his annual report, which was adopted.

The Hon. Secretary presented his annual report, and it was adopted.

Election of Officers

The following were elected office-bearers:—

President.—Mr. R. Barons Nelder.

Hon. Treasurer.—Mr. R. Barons Nelder.

Hon. Auditor.—Mr. E. R. Edwards.

Hon. Secretary.—Mr. S. J. Motton.

Council.—The President, Hon. Treasurer, Hon. Secretary, and Messrs. J. M. Penhale, Norman and Masson.

Vice-Presidents.—Messrs. Blackwell, Townson, Keeling Roberts and E. C. Bovett.

* Received for publication April 28th.

Representatives on the N.V.M.A. Council.—Messrs. R. B. Nelder, Norman and Motton.

County Secretaries.—Dorset, Major Fyrth; Somerset, Mr. A. G. Saunders; Devon, Mr. R. B. Nelder; Cornwall, Mr. S. J. Motton.

The Secretary was instructed to write a letter of congratulation to Sir F. Hobday, and a letter to Major Wright, expressing deep sympathy with him in his illness and hope for his speedy recovery.

Next Meeting.—It was decided to hold the next meeting at Truro, on June 21st.

Paper.—Dr. A. L. Sheather now addressed the meeting on "The Control of Contagious Abortion," prefacing his remarks by expressing his appreciation of their kindness in renewing their invitation to him to be present at that meeting. He greatly regretted that he had to break the engagement last autumn, at the last moment, as he had to be at the Law Courts to give evidence, and it was not possible for him to get away. Dr. Sheather's paper stimulated a good discussion. [The paper, and a report of the discussion, are reproduced earlier in this issue. —Ed., *V.R.*]

Vote of Thanks.—At the termination of the meeting a very hearty vote of thanks was accorded to Dr. Sheather for his kindness in coming to Exeter to address the Division.

S. J. Motton, *Hon. Secretary.*

In Parliament

In the House of Lords, on May 16th, the Protection of Animals Bill was, on the motion of Lord Banbury, read the third time and passed. Under this Bill a person convicted of cruelty to a dog will not in future be allowed to take out a licence.

Pharmacy and Poisons Bill

When the House of Commons Standing Committee resumed consideration of the above Bill on May 11th, Mr. Hacking resisted an amendment which would increase the number of persons on the Poisons Board set up under the Bill from 16 to 18. The amendment was designed to enable representatives of the Royal College of Veterinary Surgeons and of the manufacturing chemists to be appointed to the board. Mr. Hacking gave an undertaking that the Royal College of Veterinary Surgeons would be consulted before any rules were made. The Association of British Chemical Manufacturers, he said, had informed him that they did not desire representation. The draft orders under the Act would be sent to the association for consideration.

The clause was carried by 30 votes to nine.

The Committee stage was concluded and the Bill as amended was ordered to be reported to the House.

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The following questions and answers have been recorded in the House of Commons recently:—

Foot-and-Mouth Disease

Sir J. Wardlaw-Milne asked the Minister of Agriculture whether an inquiry has been held into the recent outbreak of foot-and-mouth disease in Worcestershire; and, if so, what the result of the inquiry is?

Major Elliot: I assume that the outbreak to which my hon. Friend refers is that at Kinver, Staffs, and the answer to the first part of the question is in the affirmative. This outbreak occurred among animals on a sewage farm, and the circumstances suggest that the outbreak may have been due to the introduction of virus on to the farm through the sewage effluent, although no definite proof has been obtained. I am conferring with my right hon. Friend the Minister of Health on the question as to any action which may be possible with a view to the elimination of risk of infection from this source.

Milk (Special Designations) Order

Captain McEwen asked the Minister of Health whether he is now in a position to state when the promised alterations in the Milk (Special Designations) Order, 1923, are to be effected, with special reference to the dating of milk bottles?

Sir H. Young: I would refer my hon. and gallant Friend to the reply I gave him on March 2nd. I would remind him that no promise has been given as to the alteration of the Order, in the manner suggested.

Captain McEwen: Is the right hon. Gentleman aware that a leading dairy farmer in Scotland is now milking his cows at 12 midnight and 12 noon, instead of at the normal hours, in order to comply with the law? Can he not definitely state the reason why this boon cannot be conferred upon dairy farmers, quite apart from the wider consideration to which he previously referred?

Sir H. Young: No, Sir. I have no information on the subject of the hours of milking so far North, but I will certainly take the information from the hon. and gallant Member.

Tuberculosis Order

Mr. Kirkwood asked the Minister of Agriculture if he is aware that the veterinary inspector of Glasgow, in a report to the Markets Committee, states that no less than 14·5 per cent. of milk samples tested by him contained virulent tubercle bacilli, that many infected cows are sent to the city market for sale, and that nearly 9,000 bovine consumptives remain undetected in Scotland; and what measures are to be adopted to ensure greater efficiency in working the Tuberculosis Order of 1925 pending the institution of national control of milk supervision?

The Minister of Agriculture (Major Elliot): I have seen the report to which the hon. Member refers, and understand that the Department of Health for Scotland hope to publish shortly the results of a recent investigation on this subject carried out in the four large cities of Scotland. A Committee of the Economic Advisory Council is now considering what practical measures can be taken to reduce the incidence of tuberculosis (as well as of other diseases) among milch cattle in this country, including any changes desirable in existing administrative practice and the hon. Member may rest assured that the recommendations of that Committee upon this difficult question will receive the most careful consideration.

Horses (Exports)

Sir Cooper Rawson asked the Home Secretary whether he has considered the memorandum sent to him entitled "A Plea for our Wild Ponies," issued by the National League against the Export of Horses for Butchery, which gives specific instances of cruelty to and suffering by unbroken

moor and forest ponies in this country; and whether he will take steps to prevent any future occurrences of a like nature ?

Sir J. Gilmour: I have seen the memorandum entitled "A Plea for our Wild Ponies," as issued by the National League against the Export of Horses for Butchery, and I am causing inquiries to be made in the matter.

. . . . .

Cruelty to Animals

Sir R. Gower asked the Home Secretary whether his attention has been called to the conviction at Hailsham Petty Sessions, on Wednesday May 3rd, of John Henry Everitt, for cruelty to a dog, to the sentence of imprisonment given him, and to the complaint of the presiding justice that the bench could not sentence an offender like Everitt, who had been five times previously convicted of cruelty, to be flogged; and whether, as similar complaints have recently been made by other courts, he will now consider instituting legislation authorising courts to impose sentences of corporal punishment upon each offender?

Sir J. Gilmour: I have seen Press reports to the effect mentioned in the first part of the question. The answer to the second part is in the negative.

Sir R. Gower asked the Home Secretary how many persons have been convicted in England and Wales, during the twelve months prior to the last available date, for cruelty to animals; and how many of such persons have been sentenced to undergo terms of imprisonment?

Sir J. Gilmour: The latest available figures are those for 1931. During that year the number of persons convicted of offences falling under the head of cruelty to animals in the Criminal Statistics was 2,152, of whom 43 were sentenced to imprisonment without the option of a fine.

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Public Health Services

Mr. Guy asked the Secretary of State for Scotland if he is now in a position to state whether he proposes to institute an inquiry into the public health services, as recommended by the Local Government (Scotland) Committee ?

The Under-Secretary of State for Scotland (Mr. Skelton): My right hon. Friend proposes to adopt the recommendation of the Committee on Local Expenditure that he should institute an inquiry into the public health services in Scotland. He hopes to be in a position to announce the personnel and the terms of reference of the proposed committee shortly.

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Musk Rats (Preventive Measures)

Lieut.-Colonel Heneage asked the Minister of Agriculture which are the catchment areas in which the musk rat has been found; and whether the catchment area authorities or the internal drainage boards are responsible for instituting preventive measures?

The Minister of Agriculture (Major Elliot): The presence of musk rats at large has been established in three catchment areas, namely, the Severn, the Arun, and the Thames above Teddington Lock, and local authorities are collaborating with the Ministry in the trapping operations which are in progress there. While there is no specific statutory obligation on catchment and internal drainage boards to take preventive measures in respect of musk rats, both sets of authorities are obviously concerned to do all they can to protect their systems from possible damage, and to this end they have been advised by the Ministry what action to take if the presence of musk rats is detected.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

May 29th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

May 31st.—R.C.V.S. Council Election: last date for receipt of Voting Papers.

June 1st.—Meeting of the Central Veterinary Society at 10, Red Lion Square, W.C.1.

June 7th.—R.C.V.S. Annual General Meeting, 12 noon.

June 7th.—Annual General Meeting of Victoria Veterinary Benevolent Fund.

June 8th.—D.V.S.M. Examination begins.

June 8th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Peterborough.

June 8th.—Combined Meeting of the Royal Counties, South-Eastern and Central Divisions, N.V.M.A., at the Royal Veterinary College, Camden Town.

June 9th.—R.A.V.C. Annual Dinner, Hotel Victoria.

June 9th.—Special General Meeting of the Yorkshire Division, N.V.M.A., at Leeds.

June 12th.—D.V.S.M. Oral Examination.

June 28th.—Summer Meeting of the Lancashire V.M.A., Ironbridge Hotel, Eaton Park, near Chester.

June 30th.—Final date for payment of Annual Fees to R.C.V.S.

July 5th.—R.C.V.S. Committee Meetings begin.

July 6th.—Meeting of Council R.C.V.S. for election of President and other Officers.

July 7th.—R.C.V.S. Quarterly Meeting of Council.

July 10th.—R.C.V.S. Membership Examination begins.

Sept. 18th-23rd.—N.V.M.A. Congress, Llandudno.

Sept. 25th-26th.—R.C.V.S. Jubilee Memorial and Bursary Prize Examination.

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R.C.V.S. OBITUARY

Taylor, James Brown, 25, Catherine Street, Dumfries, Captain, late R.A.V.C. (T.F.), Graduated Glasgow, May 21st, 1908. Died May, 1933.

. . . . .

In reference to Captain Taylor's death, a friend of the deceased gentleman writes: "Many friends and members of the profession will have learned with regret of the death of Captain James B. Taylor, Veterinary Surgeon, Dumfries, which

took place in a nursing home in Glasgow, on the 14th inst.

"Although feeling ill since last summer, Captain Taylor carried on the work of his practice until a few months before his death. A man of high character, of a kindly and genial disposition, Mr. Taylor was a great lover of animals, and, except for the few occasions when he went fishing—a sport of which he was very fond—he gave the whole of his life to the study and work of his profession. He will be missed and mourned by his many clients, to whom he always gave of his best, as well as by members of his profession, who held him in high esteem.

"Captain Taylor was a native of Blantyre, Lanarkshire. After qualifying as a veterinary surgeon at Glasgow, in 1908, he worked as assistant and locum tenens in Scotland, England, Ireland and Wales. When war broke out in 1914, he at once joined the army, and went to France with the 51st Highland Division, with which Division he served, as a Veterinary Officer, throughout the whole course of the war. On demobilisation he went into partnership in Dumfries, where, since 1926, he has been carrying on practice for himself. He had built up a very extensive connection.

Captain Taylor leaves a widow and three daughters, for whom much sympathy is felt."

The funeral took place at Larkhall Cemetery, on Wednesday, May 17th, when the veterinary profession was represented by Messrs. Lindsay, Davidson, and Sangster, all of Dumfries.

Among the floral tributes was a wreath sent by the Dumfries and Galloway Division of the N.V.M.A.

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PERSONAL

Birth.—Jennings.—To Dorothea Lucy and Sydney Jennings, a son, born May 12th, 1933.

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HUMANE SLAUGHTER

Speaking at a meeting of the Derby Branch of the R.S.P.C.A., at which a resolution was passed urging the Town Council to adopt 9b model bye-law recommended by the Ministry of Health for the mechanical stunning of animals before bleeding, Sir Frederick Hobday said it had been recently reported that "humane slaughter" had been introduced in abattoirs in the Belgian Congo, a fact which should help the spread of the movement in Great Britain. Scotland and Northern Ireland had fully adopted the best measures, and he would like to see this example followed in Derby.

Mr. W. Tweed, chief veterinary officer for the City of Sheffield, said that during the past three years he had been responsible for the administration of bye-law 9b in his city on all animals except those killed at Jewish shaughterhouses. He could safely say the butchers of Sheffield made no complaints about the system, and he was perfectly certain they would not go back to the pole-axe again. Once the mechanical system came into force he was certain the butchers would be happy, and it was gratifying to hear that a large number of butchers in Derby had voluntarily adopted the mechanical instruments for which they deserved to be complimented. (Hear, hear.)

Mr. Tweed went on to speak of the electrolethaler method of stunning which had been adopted at Sheffield, which he claimed to be superior to the pistol, and was used on pigs, some sheep and some cattle. The electro method, he said, should be used by a full-time man, although anybody could work the machine. They had a man dealing with 800 pigs a week.

Dr. Ash, Medical Officer for Derbyshire, dealing with the arrangement of slaughterhouses, said he would like to see a Bill before Parliament with a view to the abolition of many small premises. It was impossible properly to supervise the great number of small slaughterhouses with the staff at his command.

Captain O. V. Gunning, ex-President of the Derbyshire Division of the National Veterinary Medical Association, said the branch had passed a resolution giving whole-hearted support to the R.S.P.C.A., in its endeavours to obtain universal humane slaughter of animals.

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MEAT INSPECTION IN CO. DUBLIN

"The meat of animals slaughtered in the absence of veterinary inspection is being sold in Dublin Suburbs and throughout the county," says the *Irish Independent*.

"But this unsafe and unsatisfactory practice is to stop. Farmers who have been hawking lamb and sheep, killed in the fields and outhouses, in the suburbs and towns, will, in a very short time, be obliged to do their slaughtering in the presence of a veterinary inspector. Victuallers will also have inspectors at all killings.

"The Dublin Co. Board of Health are co-operating with Dr. J. A. Harbison, Co. Medical Officer of Health, who aims at having all meat inspected at the time of slaughter, and a chief veterinary inspector and four part-time veterinary inspectors for the county were recently appointed.

"The Board of Health are seeking from the Minister for Local Government urban powers to enable them to make bye-laws for the proper construction, licensing, and inspection of slaughterhouses, and provide for the 'decent and seemly conveyance of meat' and for meat inspection.

"Dr. Harbison is anxious to have the duties of veterinary inspector so arranged that in any given area the same veterinary inspector will see that the Dairy and Cowsheds Order, the law in respect of contagious diseases of animals, and the regulations about to be sought for inspection of slaughterhouses and meat, are complied with.

"Last year a great deal of meat brought in from the county and adjoining areas was hawked in Dublin, Mr. P. Dolan, Chief Veterinary Inspector, declared."

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IMPEDING MEAT INSPECTION: FARMER HEAVILY FINED

At Eccleshall Police Court recently, Roland John Simpson (44), of Ankerton House Farm, Eccleshall, was charged with impeding an inspector of a local authority in the execution of his duty.

He pleaded guilty.

Prosecuting, Mr. H. C. C. Collis said that Mr. J. E. Hutchinson, a County Veterinary Officer, visited defendant's farm in the ordinary course of his duty for the purpose of examining cattle. Following his inspection he ordered that one cow should be removed for slaughtering, as it was in a tuberculous condition. This was done, the cow being taken to a slaughterhouse, slaughtered and dressed. While the carcass was hanging in the slaughterhouse, waiting for Mr. Hutchinson to examine it again, defendant arrived, and asked where his cow was. It was pointed out to him, as was the fact that it had a tuberculous lesion

adhering to the ribs on the right side. Defendant asked the slaughterman to cut this lesion off, but he refused to do so, whereupon defendant picked up a knife and cut it off himself, remarking, "They are not going to condemn my beast, and they won't know now." When he examined the carcass, Mr. Hutchinson found the beast to be in an advanced stage of tuberculosis, whereupon defendant said it was not, and commenced to use abusive language.

It was evident, said Mr. Collis, that defendant's action was in consequence of the scale of compensation paid for slaughtered animals. If the beast had been found to be free from tuberculosis he would have been paid £13 for it. If merely tuberculous, he would receive £9; as it was in an advanced state of tuberculosis, he would only receive £3. It seemed obvious, continued Mr. Collis, that defendant was endeavouring to obtain £6 more for the beast than he was entitled to receive.

Mr. John Edward Hutchinson, Veterinary Surgeon, gave evidence.

Defendant, in a statement, said he was very sorry for the occurrence, but what he did made no difference to the value of the cow.

Addressing defendant, Major Moat said the Bench took a very serious view of the case, especially as this was the second occasion on which he had been before that Court on somewhat similar charges. He would be fined £25, with £5 11s. 6d. special costs.

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MEAT TRANSPORT: DANGER OF TAINTING

Some of the difficulties of transporting meat were mentioned by Colonel Dunlop Young, Chief Meat Inspector of the City of London, in the course of evidence at the Board of Trade inquiry into the application of the National Farmers' Union for an Order in Council to require the marking of all imported meat and poultry with an indication of origin. Oranges, he said, should never travel with meat, and frequently the smell of oil in an oil-burning ship penetrated to the hold and affected the fat.

How, he asked, if they had extensive marking, would they brand boxed meat and offal, and how would they deal with kidneys? At present the boxes were marked, but what would happen after breaking the bulk of a shipment? Imported meat could not be kept too long in hanging rooms—not chilled—for marking. A mark stamped over the carcass might be objectionable to butchers, but a small stamp on the principal joint would give the country of origin and be a guarantee that the meat had been inspected and passed as suitable for human consumption.

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R.A.V.C. GOLFING SOCIETY

Following are the results of competitions held by the above Society, at the North Hants Golf Club, on May 17th and 18th, 1933:—

Challenge Cup (36 holes Medal Play [scratch]).—Major J. Judge, 81+83=164.

Founder's Cup.—Lieut.-Colonel F. D. Hunt, 85—13=72.

The Conder Cup (Eclectic).—Lieut. I. McLaren (12) 66.

Captain's Prize (Bogey Singles).—Lieut. D. I. C. Tennant (15), 1 down.

Bogey Foursomes.—Major J. Bell and Captain G. S. Walker, 1 down.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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VETERINARY EXAMINATION OF DAIRY CATTLE

To the Editor of the Veterinary Record.

Sir,—May I be allowed to answer Major Rabagliati's letter in the current issue?

1. I did not come to the conclusion that his article in the *Veterinary Journal* related only to whole-time service. I said that Mr. Baxter only quotes from the report of a Chief Veterinary Officer, and followed that by a remark that that was so, only because part-time service was not reported.

2. His third paragraph is a distorted view of the first paragraph of my letter to you of May 6th. I said that "the advocacy of a regular inspection *has vindicated* our policy." That policy, however, *was not advocated by the profession as a whole, for the benefit of a few of its members.* The way this policy *is* being advocated is dividing our ranks, and this cleavage is *not* demonstrating our motto "*Vis Unita Fortior.*"

I have said from the beginning that the profession is *too small numerically* to carry a whole-time service, and that all available practitioners should be employed on this work. This would close the ranks, the profession would be strongly knit together, and this would make both for unity and strength. We are as a profession too small to be divided, BUT IN THAT VERY SMALLNESS LIES OUR STRENGTH IF WE ARE UNITED!

3. It is essential that the Veterinary Officer carrying out the routine cattle inspections should be appointed an Inspector under the Diseases of Animals Acts, so that he can deal with any "tuberculous cattle he finds under the provisions of the Tuberculosis Order." (Major Rabagliati, *Veterinary Journal*, April, 1933.) Is not Major Rabagliati in error here? Under the Diseases of Animals Act we do not make routine inspections. Routine inspections are only made under the Milk and Dairies Order *with which is coupled the Tuberculosis Order.* The Diseases of Animals Act is totally different, and comprises—anthrax, cattle plague, foot-and-mouth disease, glanders and farcy, epizöotic lymphangitis, pleuro-pneumonia, rabies, sheep pox, sheep scab, swine fever, and *tuberculosis.* The Diseases of Animals Act comprises *all* animals—but the Tuberculosis Order and the Milk and Dairies Order, which have to be carried out as one order, only applies to bovines. It is, however, recommended that the inspectors appointed by Local Authorities *under the Diseases of Animals Act,* should also be appointed for the Tuberculosis Order and Milk and Dairies Order, not *vice versa,* so that, instead of my case for the practitioner being weakened, it is doubly strengthened because, instead of the practitioner losing one appointment he is losing two.

4. It is true that, as Major Rabagliati says, "there has been no inspection of cows in the majority of districts, and that it *will be new work.*" *That is exactly why I took up this fight—I want the present part-time man to be consolidated in his position, and all the available men in country practice to be appointed to these positions, as they are by their training entitled to be.*

"Carry on under the terms suggested" (by the

Grigg Commission) *i.e.*, "As and when the supply of Qualified Veterinary Officers is equal to it"—which I suppose implies that veterinary practitioners, as at present educated, are not really capable of carrying out these duties, but may be, as there is no alternative, kept on until *really* qualified men are available.

6. Are these duties of a whole-time veterinary officer so exigent that "it is a never-ending tax on one's time?" Are they? Are they at work, day after day, with no time for relaxation, no time to give to extraneous duties?

Mr. Steel Bodger very rightly took up one of my main points, that is, where I recommended that all country practitioners should be constituted part-time inspectors. This resolution of Mr. Steel Bodger's was also carried, with the instruction that it, too, be laid before the Parliamentary Committee of the N.V.M.A.

8. The chief object under the Tuberculosis Order, for which routine inspection of cows was instituted, is *not especially* to eliminate those giving tuberculous milk—other tuberculous conditions are equally important, *e.g.*, tuberculous emaciation, and chronic cough with definite clinical signs of tuberculosis; and, under the Milk and Dairies Order, acute mastitis, actinomycosis of the udder, anthrax, foot-and-mouth disease, suppuration of the udder, any comatose condition, septic condition of the uterus, and any infection of the udder or teats likely to convey disease. (I think anthrax and foot-and-mouth disease could be eliminated). There are two Orders, not one—a fact which Major Rabagliati seems to forget. The Tuberculosis Order is important, but the Milk and Dairies Order is equally so.

9. Perhaps the following statistics from a part-time service will be more convincing than those given by Major Rabagliati, which apply only to tuberculous udders and cows giving tuberculous milk and which show how the two orders are worked together.

1932-33—*First* six months inspection.

	cows
Tuberculosis (as defined in the Orders)	210=·45%
Suppuration of the Udder ...	164=·34%
All other diseases	31=·07%

1932-33—*Second* six months inspection.

Tuberculosis (as defined in the Orders)	145=·29%
Suppuration of the udder ...	107=·21%
All other diseases	13=·03%

All these tuberculosis cases were confirmed on *post-mortem*.

If *all* counties were regularly inspected, these figures would fall considerably, as quite an appreciable number are imported from surrounding districts.

"A narrow nationalism sees no point of view but its own." This can be equally said of the recommendation of the Grigg Commission as regards a Veterinary Health Service.

I have the honour to be, Sir,
Your obedient Servant,
J. W. Hall Masheter.

Ruddle House,
Newnham-on-Severn.
May 20th, 1933.

. . . . .

To the Editor of the Veterinary Record.

Sir,—Mr. Rabagliati's article on the above subject, published in the *Veterinary Record* of May 20th, calls for some comment. In the first place, let me explain that, practising as one does in a district where there are no dairies, one has no axe to grind in the matter.

In paragraph four, Mr. Rabagliati writes: "It is not a question of whole-time men being better than practitioners or *vice versa, but of which system* is superior judged on its own merits of practicability, economy and efficiency. If practitioners can put up a better case than the few holding whole-time appointments I take it they will be employed." On the score of economy, if figures published recently regarding the cost of dairy inspection by whole-time veterinary officers are correct (and they have not to my knowledge been contradicted) I sincerely hope that practitioners will not compete.

Under existing regulations, the inspection of dairy cows involves some sort of clinical examination, and a careful palpation of the udder of each animal, together with a microscopic examination of specimens in a percentage of cases. Professional men, then, on the accuracy of whose work the well-being of the community may depend, are no doubt faithfully carrying out these examinations—for the princely sum of something under sixpence each, as the total cost of the bi-annual inspection inclusive of administration, travelling etc., is said to be one shilling per cow per annum. Local authorities are certainly getting value for money, especially when one remembers that in some districts they do not hesitate to pay a valuer (usually a police officer) £1 plus travelling expenses to value each cow certified under the Tuberculosis Order.

In paragraph five there is the most amazing statement: "It is not easy to see how a busy practitioner can find time to carry out a work, in addition to his private practice, which it takes a whole-time official all of his available time and energy to perform." In view of the fact that this cannot be regarded as specialised work, personally I find it much less easy to see how such a statement could be regarded as other than utter nonsense. Mr. Rabagliati must realise that each whole-time official works an area previously worked by six or more part-time men. Further, if a busy practitioner becomes unduly busy he is not without hope. An advertisement in the *Veterinary Record* would satisfy anyone that qualified assistance is always available.

Yours faithfully,
James Hill, M.R.C.V.S., D.V.S.M.

Long Sutton,
Wisbech.
May 22nd, 1933.

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To the Editor of the Veterinary Record.

Sir,—The letter of Major Rabagliati, in your issue of the 20th inst., is a desirable step towards ending the controversy that has arisen, but certain of his observations call for comment.

Let us hope that there will be no further argument as to which is the better man, the whole- or part-time inspector; such argument is futile, and leads us nowhere.

Unfortunately, the Report eulogises the superiority of the whole-time inspectorate—largely untried in England—damning with very faint praise his part-time colleague in the words, "We do not wish in any way to disparage the work carried out by veterinary surgeons in private practice, and employed part-time by local authorities." (Paragraph 75).

The resentment of many part-time inspectors must be due to their having omitted to note the above unsolicited testimonial; these part-time inspectors, by some strange perversion of logic, think that because they are whole-time veterinary surgeons, they are well-equipped for the duty of herd examination, and that a life-time experi-

ence in the practice of their profession, has enriched their knowledge of animal diseases and health. Funny what ideas some people get!

Major Rabagliati expresses "considerable surprise" that a "state of panic should have arisen amongst many members of the profession which threatens completely to divide our ranks," and I, on my part, am considerably surprised that he should be surprised at all, however inconsiderably.

If he thinks that a body of men whose life's work is veterinary practice, and who have capably undertaken the duties of veterinary inspection, since the days when the Privy Council controlled the scheduled diseases, will humbly submit to being cast aside as worthless, either he has, or I have, a wholly wrong idea of the sort of stuff they are made of.

The profession has some reason to be grateful to the Commissioners for stressing the importance and desirability of regular examination of dairy cattle, but gratitude is tempered greatly when the gift is accompanied by a blow—a violent and unprovoked blow below the belt, for which we had not guarded.

The post-war graduates may be led to think that the Report is pioneer work, and that before the Commission dealt with the subject, no one had realised the importance of dairy herd inspection. Colonel Brittlebank was doing this work when some of the Commissioners were boys, and no doubt it was advocated long before Fleming began to write on the subject.

The Diseases of Animals Act, 1894, Sec. 35 (2), reads: "Every local authority shall keep appointed at all times at least one veterinary inspector, and shall appoint and at all times keep appointed as many other veterinary inspectors as the Board of Agriculture, having regard to the extent and circumstances of the district of the local authority decide." If the word "chief" had followed the word "one," herd inspection and veterinary administration in general, would to-day have been fully comparable to the Public Health Services.

Over 20 years ago, with the full confidence and folly of youth, I read a paper before the Lancashire V.M.A., urging the necessity of such an appointment to all large-scale regional authorities, and the profound wisdom of maturity has not changed my views in any way.

Major Rabagliati dismisses Mr. Hall Masheter's grievance as to financial loss, on the ground that "it is of no use approaching the public with the plea of a reduced income," and, though perhaps literally correct, this cannot be accepted, if, for "public," one substitutes the word "State." He must be unaware of the spate of legislation on Local Government which has flooded the country since the war; I do not propose to look up all the Acts, but have no diffidence in suggesting that he will not find a single one affecting the tenure and conditions of service of the servants of the local authorities, which does not provide for compensation for loss of office, in consequence of the Act.

I believe that Major Rabagliati has spent much time abroad, and so may have forgotten the fundamental principle, that in a modern democracy, the government can only govern with the consent of those governed. This principle is the basis of legislation by compromise, and all parties now realise that equity may be of as great consequence as the strict law; perusal of almost any Act will verify this fact.

A draft of a Local Government Bill, prepared by the Local Government and Public Health Committee, is now before Parliament. Section 148 (*a*) deals with the protection of the interests of any existing officer, and (*b*) provides for compensation payments to any officer displaced by the operation of the Bill when enacted.

The Rating and Valuation Act, 1925, was revolutionary in the extent to which it displaced officials of Local Authorities. This Act extinguished the Parish as the unit of rating, merging large districts into new Assessment Areas. Every parish in England and Wales then had an assistant overseer, and one or more rate-collectors, some twelve hundred urban and district councils levying rates, and as many thousand parishes.

The Act abolished the offices of all at one sweep, but every officer displaced receives compensation.

The equity of the principle is so well established that no Bill affecting local government is ever drafted without such a clause as the one previously referred to; I have no doubt that any part-time inspectors displaced are legally entitled to compensation.

As a further safeguard, the representative bodies of the profession should take the necessary steps to see that compensation clauses are embodied, if the Report receives legal sanction.

Yours faithfully,

A. B. Mattinson.

Friars House,
Bamber Bridge, Preston.
May 22nd, 1933.

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"SOME MODERN ASPECTS OF ANTHELMINTIC TREATMENT"

To the Editor of the Veterinary Record.

Sir,—In the course of the discussion on Dr. Robinson's paper, at the meeting of the E.C.V.M.A., at Norwich, on February 22nd, I made a remark, incompletely recorded in the report of the proceedings which appeared in the *Veterinary Record*, pp. 332-340, which should have read something like this: 'The reports one usually gets back (from laboratories) do not afford much guidance as to the progress being made during the course of treatment of any one animal."

The following are quotations of some reports I have received at various times from five different laboratories: "I have had the sample of fæces which accompanied your letter of —— examined by the flotation method for the discovery of worm eggs, but only a very few oxyuris eggs were found"; "Examination for worm eggs showed these to be present, but in very small numbers"; "Small numbers of strongyle ova were found on microscopical examination of the sample of fæces"; "I examined the specimens you collected this morning . . . has the heaviest infection of red worm I have ever seen: 100 eggs per microscope field . . . has a heavy infection, 25 eggs per field, and the foal is moderately infected, 13 eggs per field, together with infection of long white worms"; "No. — contains strongyle eggs in literally tens of thousands"; "Very small numbers of strongyle ova were found on microscopical examination of the sample of fæces. (There was an average number of one ovum in four preparations.)" The sample referred to in the last-mentioned report contained not less than 2,500 eggs per ounce.

Dr. A. Leslie Sheather, in a letter full of errors and ill-founded arguments, that appeared in the *Veterinary Record*, pp. 397-398, endeavours to convert my remark into an assertion of dissatisfaction on my part with reports received from various laboratories. Such an attempt borders on prevaricating.

I would point out that it is Dr. Sheather himself who connects my remark with his own laboratory. Nothing that appeared in the report of the meeting could do this to anyone but himself. To quote an old proverb would be an obvious retort, but I refrain, since my remark was made in no spirit of unkind criticism, but simply as a statement of fact, and I think it will be admitted that the above quotations fully substantiate the correctness of my remark.

I have always been exceedingly grateful for whatever help on any subject I may have received from any laboratory, Dr. Sheather's included; and I do not hesitate to state that the reports upon the examination of fæces received from the latter source have always been of greater service than those from other sources—but even they do not quite fit in with my scheme of things.

I have never been an advocate of the "washing-out" method of treatment for strongyle infection, so have not looked for those spectacular "nil count," single treatment results of which one hears, but have been antiquated enough to follow slower, less drastic, but, as I think, equally beneficial methods that may necessitate the making of several detailed egg counts per animal in order carefully to check progress.

Dr. Sheather goes on to imply, as it seems to me, that after picking his brains as to how to make parasite eggs counts I had been guilty of using this information for two years to my own benefit, and then, on February 2nd last—the date given in his letter is incorrect—of attempting to justify this by a false plea of economy.

I am wondering, since he makes definite references, whether Dr. Sheather keeps records of conversations in his laboratory and over the telephone, or only trusts to his memory? In either case his references appear to be no more exact than the first quotation he uses from the report of my remark. I would point out to him that, apart from my having no recollection whatever of having said at our interview of February 2nd—not February 22nd last—that I had been examining specimens myself *since, some two years ago, he had showed me the technique which he used*, I cannot conceive that I could have used these words, for, sorry as I am to rob Dr. Sheather of that sincerest form of flattery by imitation, it is a fact that the technique followed here in making egg counts is on the lines of that so kindly demonstrated by Colonel W. A. Wood, on the occasion of the visit of the E.C.V.M.A. to the laboratories at Cambridge, on July 25th, 1930, at the invitation of the Director of the Institute of Animal Pathology. It is this method that accommodates itself more readily to the needs of the busy practitioner. The statement made at the same interview, the one of economy because owners objected to paying for examinations as they considered them part and parcel of the treatment, still stands as a whole truth. I can assure Dr. Sheather that, as far as I know, my nerve has not, up to the present, failed me sufficiently to necessitate my spinning a yarn with a little bit of truth in it to cover up any action of mine.

Dr. Sheather could have saved himself the trouble of attempting to refresh my memory in regard to the case of acute enteritis in the mare. My mind is very clear in regard to it, and I had his written report on this case in my pocket when attending the meeting at Norwich—and at Birmingham on March 10th—and although not actually quoting from it, I specifically mentioned his report upon the case. What is now puzzling me more than the explanation of the presence of immense numbers of "larvæ" in the intestinal contents of this mare is, from where Dr. Sheather obtained the sample of this mare's fæces upon which he had reported "a short time previously."

Now that I have my pen in my hand, I would ask leave of you, Mr. Editor, to correct two glaring errors that appeared in the report of the Norwich meeting. I did not state that I made thousands of egg counts—Dr. Sheather has not been robbed of thousands of five shillings. This was, no doubt, an error by the reporter in making the transcription of his notes—befogged by the large numbers quoted—just as were the words "at Newmarket" in the last paragraph of my remarks, which should have read "in America." Anyone with experience of the transcription of the notes of a local reporter unconversant with veterinary terms will fully appreciate the difficulty our worthy Honorary Secretaries of local Divisions, generally among the busiest of practitioners, have in knocking them into something like readable form, and will willingly overlook errors that may occur. Dr. Sheather must be conversant with this difficulty and must have known that the report appearing in the *Veterinary Record*, pp. 332-340 was not a *verbatim* report.

I am wondering, Mr. Editor, what the other members of your Editorial Committee are thinking of the tone of their co-member's letter? Whether they think it is likely to lead to extended discussions on papers read at Divisional Meetings, or whether it will tend to increase the flow of articles that are being so cordially invited from the country practitioner?

I remain,

Yours faithfully,

E. Brayley Reynolds.

Newmarket.

May 15th, 1933.

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R.C.V.S. COUNCIL ELECTION

To the Editor of the Veterinary Record.

Sir,—The time is fast approaching when we will be asked to record our votes for the election of members of the Council, and I would urge our members to give very serious thought to the matter before casting their votes.

One naturally wishes to support one's intimate friends in such affairs, but I do think that the general practitioner in particular should feel sure that the candidates for whom he votes should have the capabilities and the ability to represent the profession. I have purposely refrained from scrutinising the list of candidates, so that my observations on this matter may be free from prejudice. It seems to me that many candidates are under the impression that all that is required of them is to be nominated and then await results, after which, even if they are successful, they are so lacking in courtesy that one seldom sees a word of thanks to those who have elected them. During the past twelve months it has been my misfortune to hear considerable criticism in regard to this, and I quite agree that the least we can expect from one who offers himself for election to the Council is a brief statement of his views.

A candidate may be the recipient of high honours, hold an important appointment, or make himself prominent in the Press or at meetings, but these alone are not sufficient to qualify for representation of the profession, and as the rank and file of general practitioners are the ones most deeply concerned, I hope our members will in future think more seriously than has been the custom over the question of who they will support.

Thanking you, Sir, and trusting that these observations will meet with your approval.

Faithfully yours,

R. F. Wall.

128, Queen's Road,
Bayswater, London, W.2.
***May* 19*th*, 1933.**

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To the Fellows and Members of the Royal College of Veterinary Surgeons

Gentlemen,—Having been invited to stand for election to the Council of the Royal College of Veterinary Surgeons, I venture to request the favour of your support.

Although the General Practitioners constitute by far the greatest number of the profession, they have, numerically, the smallest representation in the Council: without reflecting in any way upon the ability or desire of the non-practitioner members of the Council to give full regard to the special needs of the practitioner, I believe that a more proportionate representation is highly desirable.

The recommendation of the abolition of the Part-time Veterinary Inspector and his supercession by Whole-time Inspectors, in the report of the Reorganisation Commission for Milk, is a subject requiring the most serious attention of every member of the profession, and the adoption of the Scheme as suggested, may have the gravest effect upon the profession as a whole, with obvious repercussions upon the Veterinary Schools in the future.

Although the question of the veterinary inspection of dairy cattle is not wholly irrelevant to the marketing of milk, it would seem to be an unforeseen expansion of the Minute of Appointment and Terms of Reference, and, however well-intentioned the Members of the Commission may have been, it is a matter of profound regret that they have not clearly stated the source of information on which their opinion is based.

Had the subject of Inspection of Dairy Cattle been referred to in the Minute of Appointment, it may be assumed that the Royal College of Veterinary Surgeons or National Veterinary Medical Association would have represented the profession as a whole, or that divergent opinions could have been voiced by representative bodies, so that all sides of the case should receive full consideration. As it is, however, there is reason to fear grave discord in a profession much too small to be split by factions and party strife.

The motto of the Royal College is peculiarly apt, and I believe that it is within the power of the Council to arrest schism and formulate greatly improved suggestions to the Commission, which would not merely remove threatened injury to a large class, but be of great benefit to all in the advancement of the profession.

The voluminous Report of the Commission—210 pages—summarises an enormous amount of valuable labour by the Commissioners, of which about two pages, say one per cent., arbitrarily decides the subject of veterinary inspection: it will be a matter of surprise and regret if the practitioner inspectors submit to being arraigned, indicted, tried, found guilty and sentenced, without serious protest, or without a word of evidence being given as to their previous good character. The writings of O. Henry, and others, suggest that in the United States, the policeman combines the offices of prosecutor, judge, jury, and executioner, and one rather fears that the Commissioners have, unwittingly, followed suit—a process which is still regarded as bad form, by the more old-fashioned judiciary in Great Britain!

It would be a tragedy if all the labours of the Commission were to be discredited by assuming that their erroneous judgment on veterinary matters suggests a similar lack of accuracy in the other sections of the Report: it is obvious that the Commissioners cannot have realised that only *ex parte* evidence on this subject was being proffered, and that not supported by authoritative data.

The tragedy is accentuated by the fact that any evidence on this subject can only have been given, either by laymen, devoid of the requisite knowledge, by an enemy or enemies within the gate, or by some enthusiastic colleague bubbling over with Utopian desires, who has not learned, at his mother's knee, that the road to Hell is paved with good intentions.

In soliciting your support now I would ask for this support not only at the moment, but for all candidates representing the general practitioner, at each annual election. My solicitation is addressed just as much to the Whole-time Inspector as to his Part-time colleague, and to that majority untainted by inspectorial discord, very many of whom should obviously be removed from their pedestal of splendid isolation, and employed in the control of animal disease. No one yet seems to fully realise how much our small profession could do for the welfare of the State, and veterinary administration is, as yet, almost virgin soil. By united and harmonious action we can open the way to a realm of professional utility, that very many of us have long dreamt of. One might add (in a very subdued whisper intended for the ears of the profession only) that it might be just as well first to catch the hare, before we begin to squabble in public as to how we propose to cook it.

Progressive organisation of the functions of the profession is urgently required, but the drastic suggestions of the Report are merely a leap in the dark, with no considered scheme for dealing with sanitation, animal environment, and other diseases not less important than bovine tuberculosis.

Professional development should not be regarded as a synonym for political acrobatics, nor need progress be accompanied by spoliation, or grave offence to a very large proportion of the profession.

Yours faithfully,

A. B. Mattinson.

Friars House,
Bamber Bridge,
Preston.
May 24*th*, 1933.

The Editor acknowledges, with thanks, the receipt of the following:—

Reports of meetings of the Lancashire and of the Yorkshire Divisions, N.V.M.A., from Messrs. A. L. Mullen, and S. Sharp, respective Hon. Secretaries.

Communications from Dr. Fred Bullock (London), and Mr. K. A. Miles (Husbands Bosworth).

Diseases of Animals Acts, 1894 to 1927
SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th May, 1933	13	13	—	—	8	8	10	115	69
Corresponding period in									
1932	18	22	—	131*	1	2	8	91	46
1931	23	26	—	—	4	4	10	157	67
1930	17	18	—	—	6	8	10	156	63
Total 1st January to 15th May, 1933	143	163	54	5,161	88	159	189	544	265
Corresponding period in									
1932	181	232	3	358	66	117	125	813	377
1931	231	248	5	515	74	124	164	682	282
1930	187	199	—	—	124	189	244	1,040	412

* These animals were slaughtered in consequence of extension of disease in an outbreak confirmed during the period April 16th to 30th.